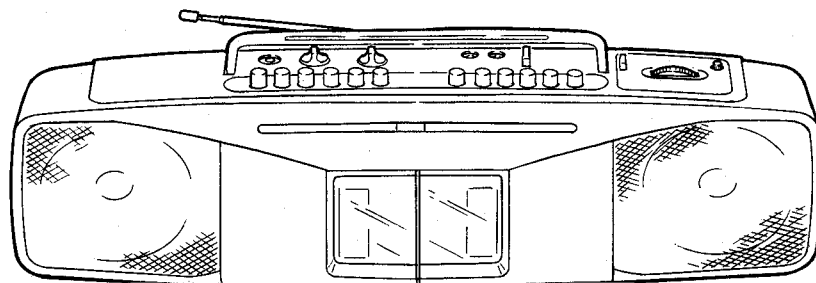


CFS-W304S

SERVICE MANUAL

E Model
AEP Model



Model Name Using Similar Mechanism	CFD-455S
Tape Transport Mechanism Type	MF-W304-64

SPECIFICATIONS

Tuner frequency range

	FM	MW	SW
West Germany model	87.6–107MHz	531–1602kHz	5.95–18MHz
Saudi Arabia model	87.6–107MHz	530–1605kHz	5.95–18MHz
Except for West Germany and Saudi Arabia models	87.6–108MHz		

Frequency response 80Hz–10,000Hz
 Speakers 10cm (4 in.) dia. full range×2
 Output Headphones jack (stereo minijack) for 16-68 ohm impedance headphones
 Maximum power output 4.6W (2.3W+2.3W)

Power requirements

	Requirements (supplied AC power cord)
West Germany model	220V AC, 50Hz
Except for West Germany model	110–120V, 220–240V AC, adjustable, 50/60Hz

9V DC, six R14 (size C) batteries

Power consumption 14W

Battery life

Batteries	FM recording
Sony SUM-2 (NS)	Approx. 4 hours
Sony AM2 alkaline	Approx. 8 hours

Dimensions

Approx. 566×151×153.5mm (w/h/d)
 (22³/₈×6×6¹/₈ inches)
 incl. projecting parts and controls, not incl. handle

Weight

Approx. 2.9kg (6 lb 6 oz) incl. batteries

Accessory supplied

AC power cord (1)

Note

This appliance conforms with EEC Directive 87/308/EEC regarding interference suppression.

Design and specifications subject to change without notice.

SAFETY-RELATED COMPONENT WARNING!!

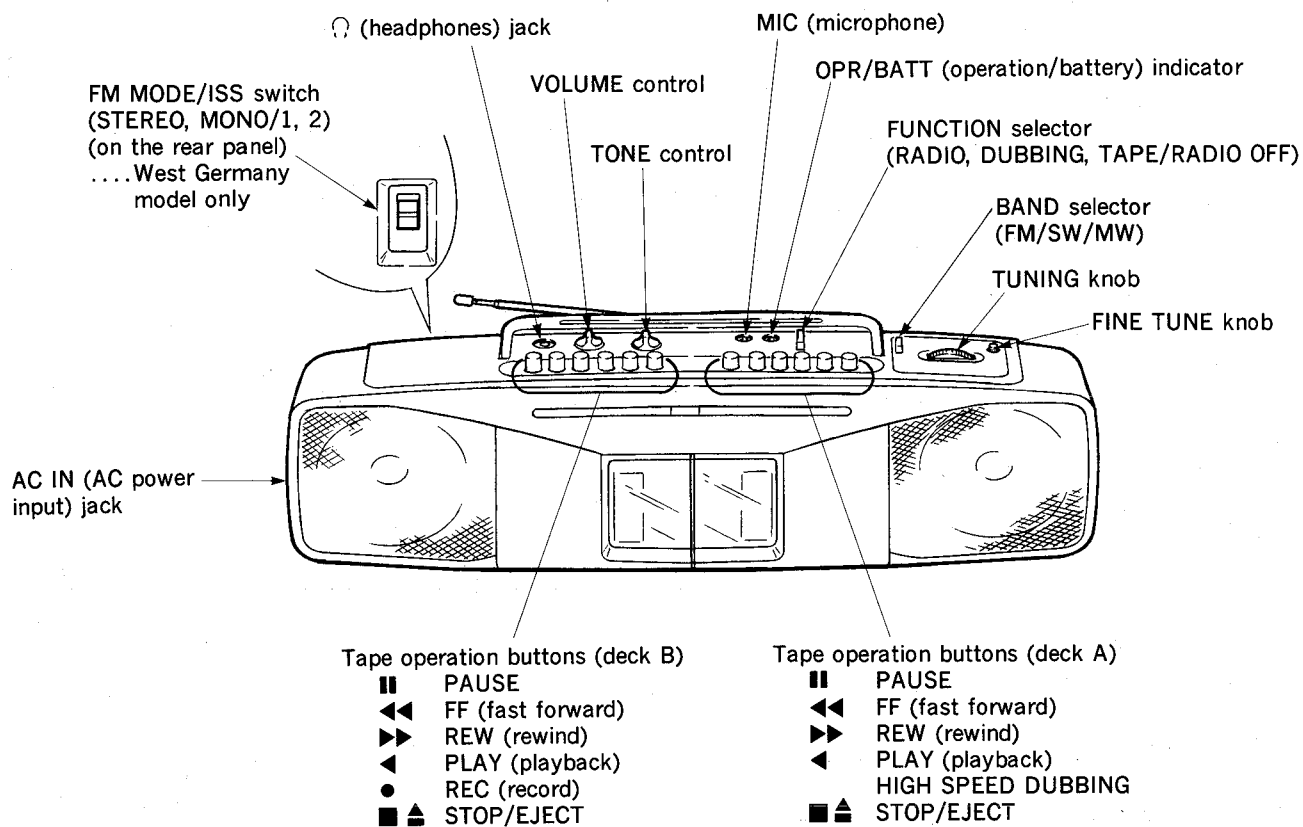
COMPONENTS IDENTIFIED BY MARK  OR DOTTED LINE WITH MARK  ON THE SCHEMATIC DIAGRAMS AND IN THE PARTS LIST ARE CRITICAL TO SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY.

RADIO CASSETTE-CORDER
SONY®



SECTION 1 GENERAL

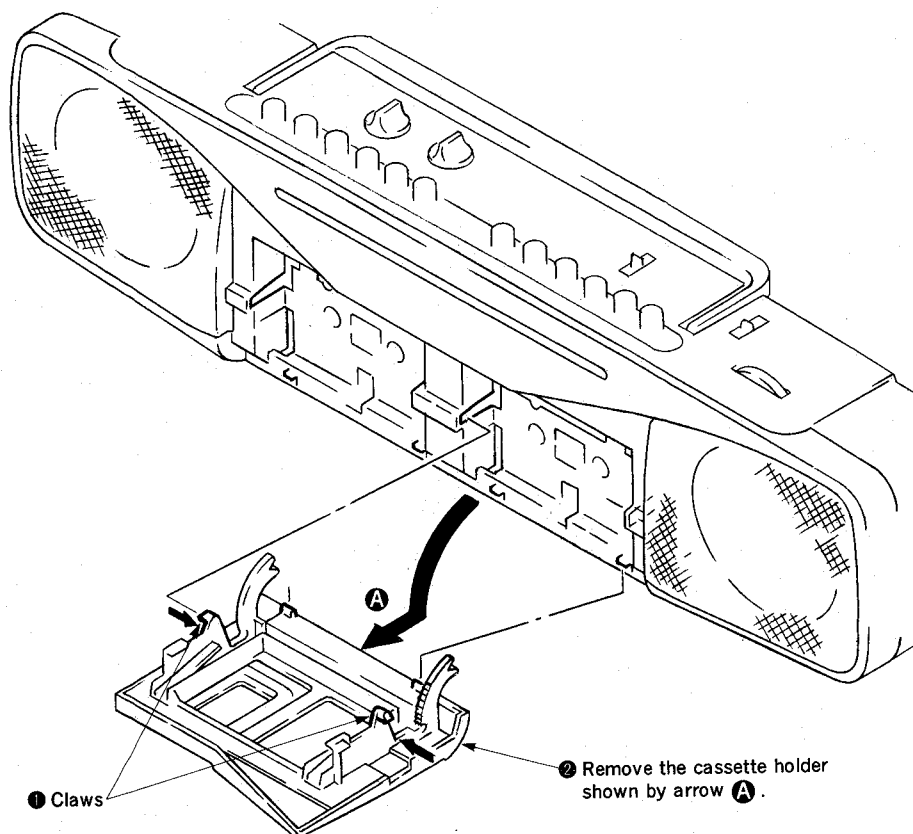
1-1. LOCATION OF CONTROLS



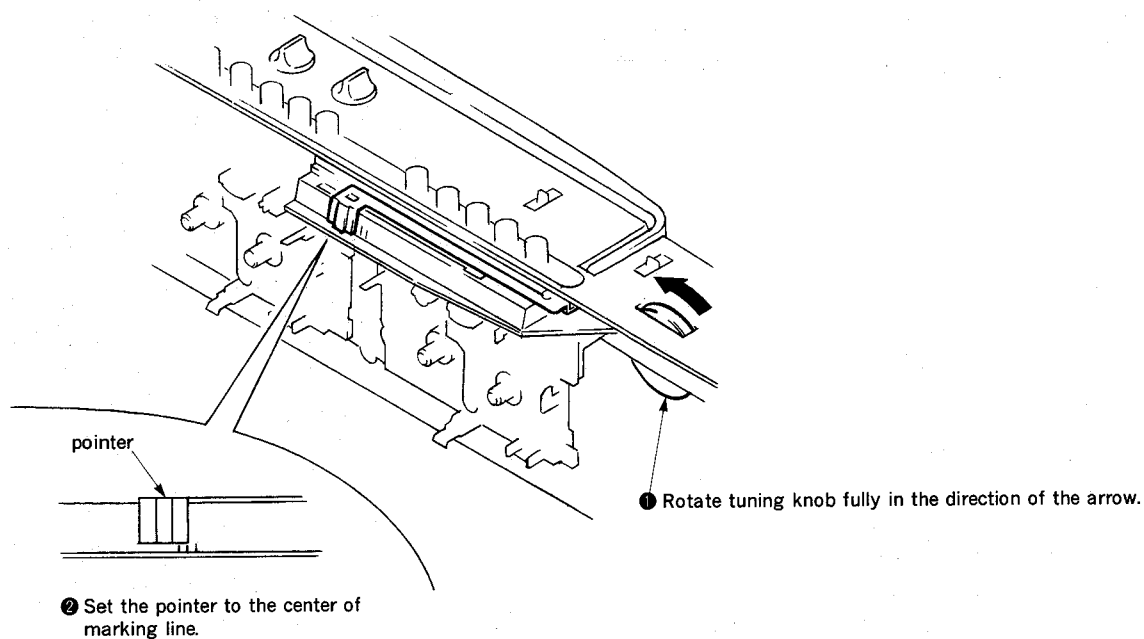
SECTION 2 DISASSEMBLY

Note : Follow the disassembly procedure in the numerical order given.

2-1. REMOVAL OF CASSETTE HOLDER



2-2. DIAL POINTER SETTING



SECTION 3 MECHANICAL ADJUSTMENTS

PRECAUTION

- Clean the following parts with a denatured-alcohol-moistened swab :

record/playback head	pinch roller
erase head	rubber belts
capstan	idlers
- Demagnetize the record/playback head with a head demagnetizer. (Do not bring the head demagnetizer close to the erase head.)
- Do not use a magnetized screwdriver for the adjustments.
- After the adjustments, apply suitable locking compound to the parts adjusted.
- The adjustments should be performed with the rated power supply voltage unless otherwise noted.
- Power supply voltage: 9V dc.

Torque Measurement

Torque	Torque meter	Meter reading
Forward	CQ-102C	20—60g·cm (0.28—0.83 oz·inch)
Forward back tension	CQ-102C	2—6g·cm (0.028—0.083 oz·inch)
Reverse	CQ-102RC	20—60g·cm (0.28—0.83 oz·inch)
Reverse back tension	CQ-102RC	2—6g·cm (0.028—0.083 oz·inch)
Fast Forward	CQ-201B	more than 45g·cm (more than 0.62 oz·inch)
Rewind	CQ-201B	more than 45g·cm (more than 0.62 oz·inch)

Tape Tension Measurement

Mode	Meter	Meter Reading
Forward	CQ-403A	more than 70g (more than 2.47 oz)
Reverse	CQ-403R	

SECTION 4 ELECTRICAL ADJUSTMENTS

4-1. TAPE RECORDER SECTION

Standard Output Level

Output terminal	SP OUT	HP OUT
load impedance	3.2Ω	32Ω
output signal level	0.775V (0dB)	0.25V (-10dB)

Test Tape

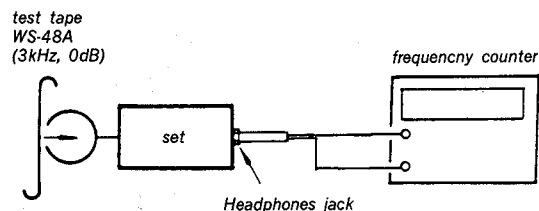
Type	Signal	Used for
WS-48A	3kHz, 0dB	tape speed adjustment

Tape Speed Adjustment **DECK A** **DECK B**

Procedure :

- Perform high speed adjustment before normal speed adjustment.

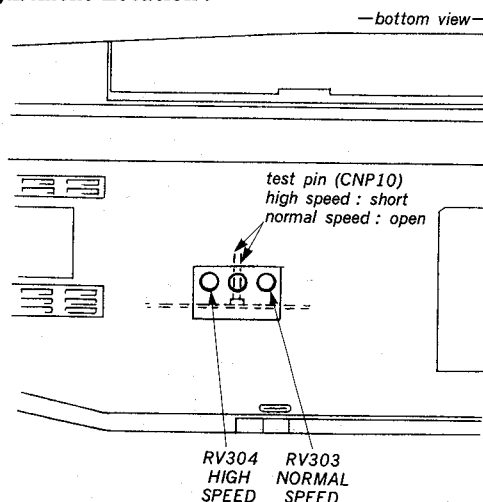
Mode : playback



Speed	Test pin (CNP10)	Deck	Adjustment point	Frequency counter
High	short	A	RV304	5,685—5,715Hz
		B	confirm	
Normal	open	A	RV303	2,970—3,000Hz
		B	confirm	

Frequency difference between the beginning and the end of the tape should be within $\pm 1.5\%$.

Adjustment Location :

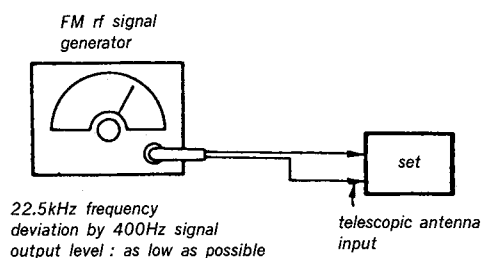


4-2. RADIO SECTION

• FM Section

Setting :

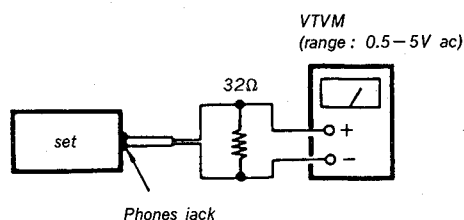
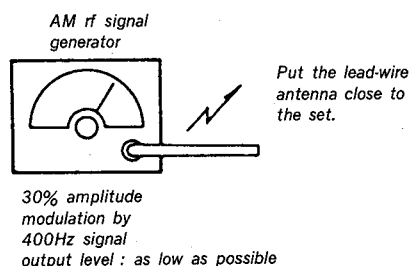
BAND switch : FM



• MW Section

Setting :

BAND switch : MW or LW

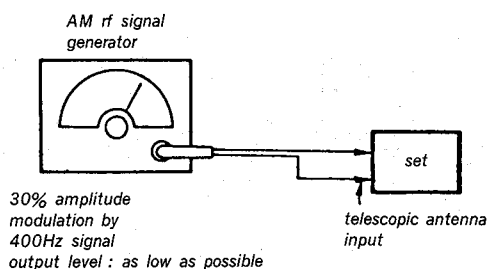


• SW Section

Setting :

BAND switch : SW

FINE TUNE knob : mechanical mid



() : West Germany, Saudi Arabia Model

FM FREQUENCY COVERAGE ADJUSTMENT	
Adjust for a maximum reading on VTVM.	
L2	CT2
87.5MHz (87.35MHz)	108.5MHz (107.8MHz)

FM TRACKING ADJUSTMENT	
Adjust for a maximum reading on VTVM.	
L1	CT1
87.5MHz (87.35MHz)	108.5MHz (107.8MHz)

MW FREQUENCY COVERAGE ADJUSTMENT	
Adjust for a maximum reading on VTVM.	
L6	CT4
520kHz	1,680kHz

MW TRACKING ADJUSTMENT	
Adjust for a maximum reading on VTVM.	
L3	CT3
600kHz	1,400kHz

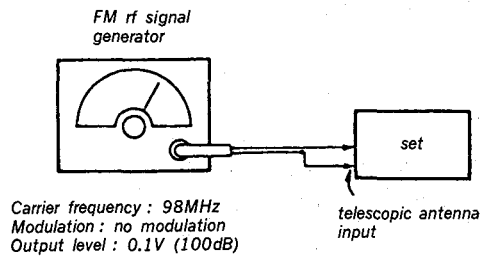
AM IF ADJUSTMENT	
Adjust for a maximum reading on VTVM.	
T1	
455kHz	

SW FREQUENCY COVERAGE ADJUSTMENT	
Adjust for a maximum reading on VTVM.	
L4	CT6
5.8MHz	18.4MHz

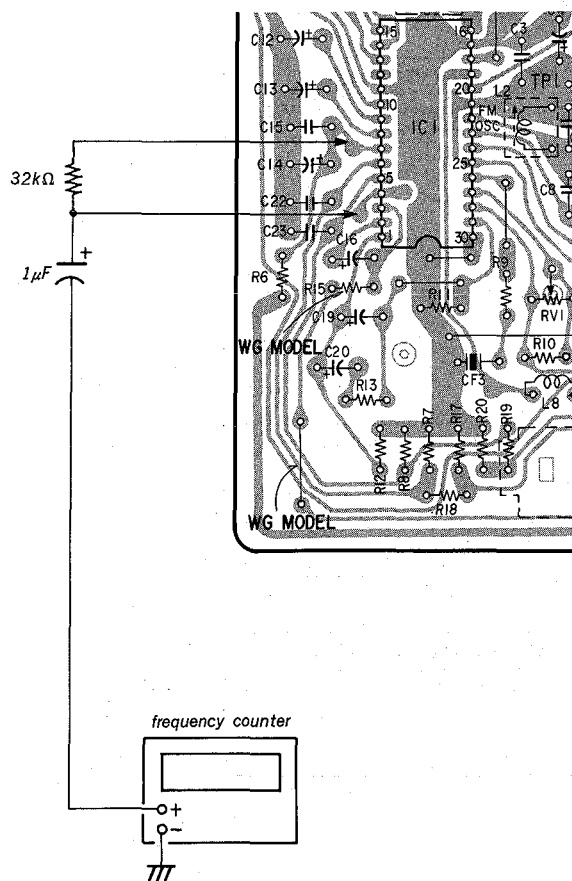
SW TRACKING ADJUSTMENT	
Adjust for a maximum reading on VTVM.	
L7	CT5
5.8MHz	18.4MHz

- Repeat the procedures in each adjustment several times, and the frequency coverage and tracking adjustments should be finally done by the trimmer capacitors.

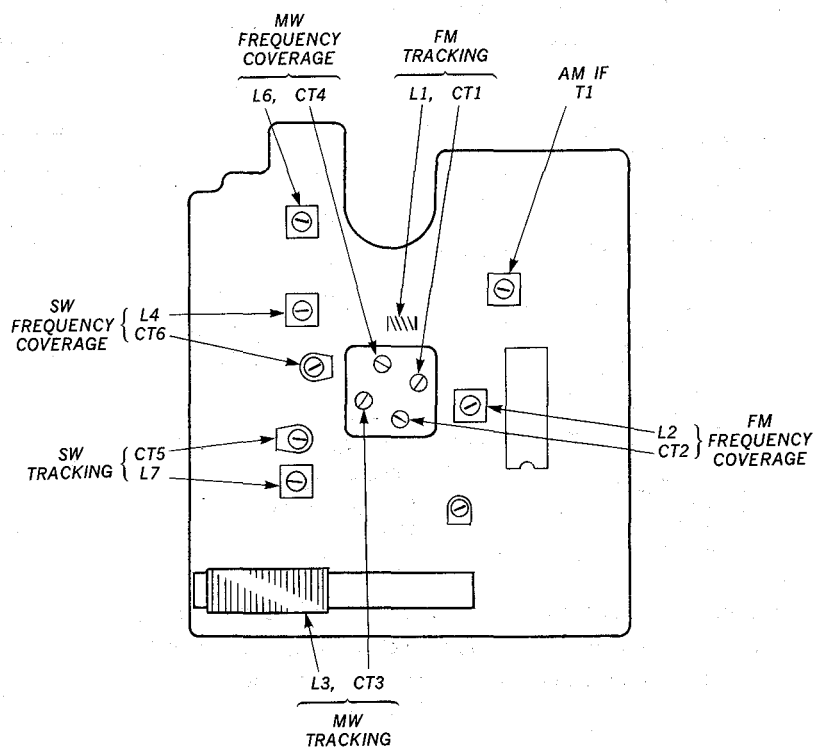
VCO Adjustment Procedure :



1. Connect frequency counter to the positions shown below.
2. Tune the set to 98MHz.
3. Adjust RV1 for $76\text{kHz} \pm 500\text{Hz}$ reading on the frequency counter.

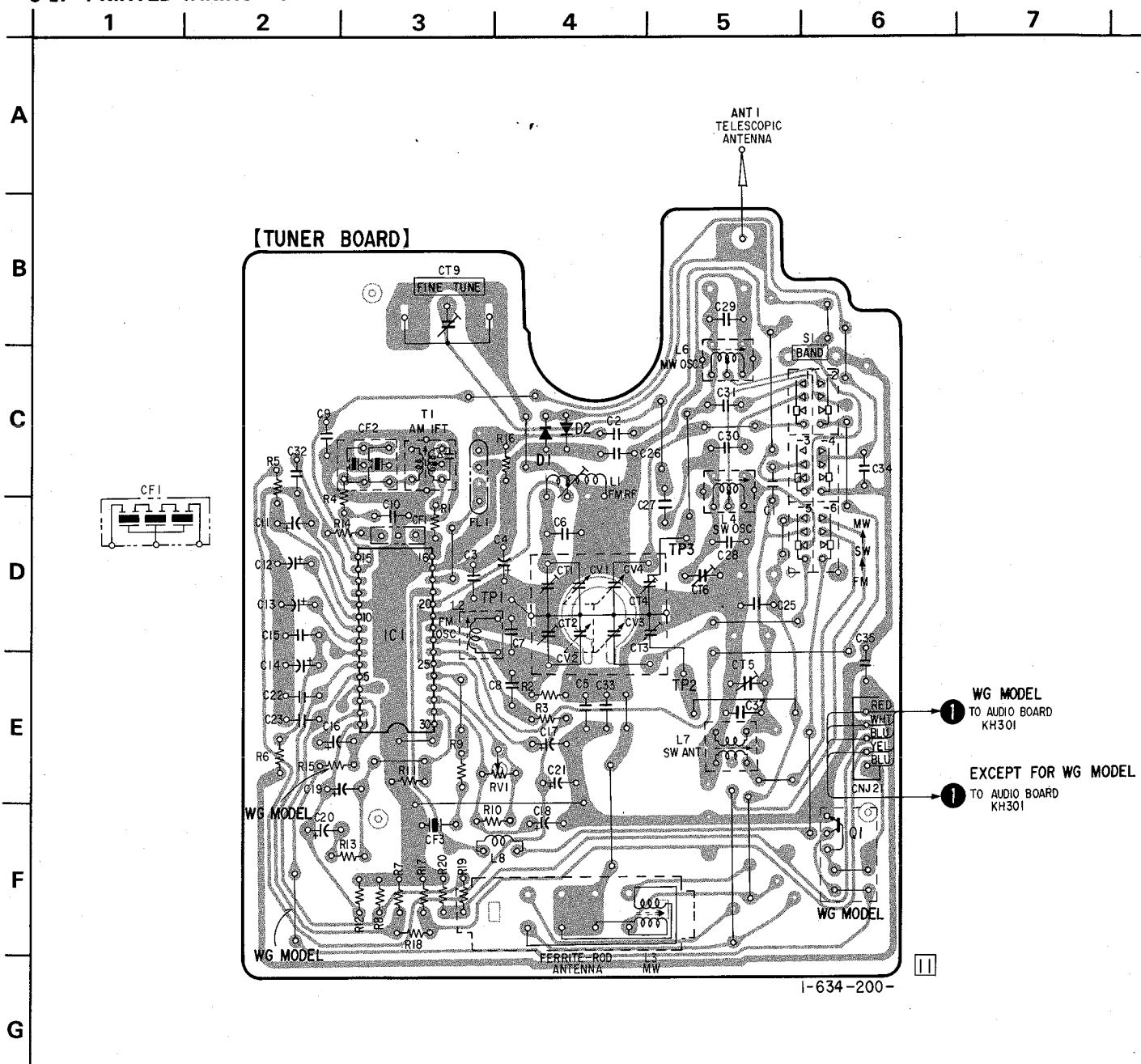


Adjustment Location : tuner board



SECTION 5 DIAGRAMS

5-1. PRINTED WIRING BOARD —TUNER SECTION—



I-634-200-

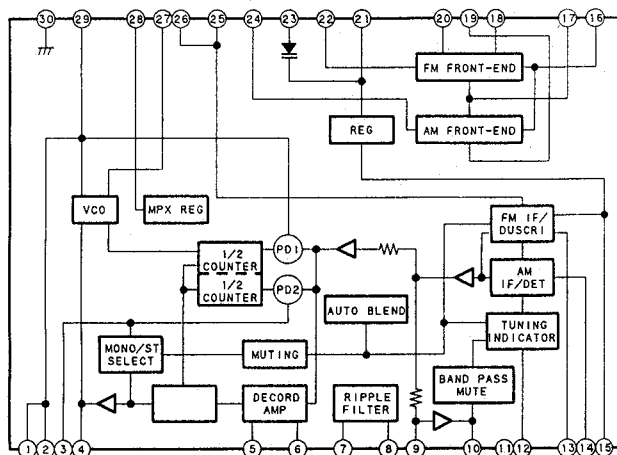
Note:

• ○ — : parts extracted from the component side.

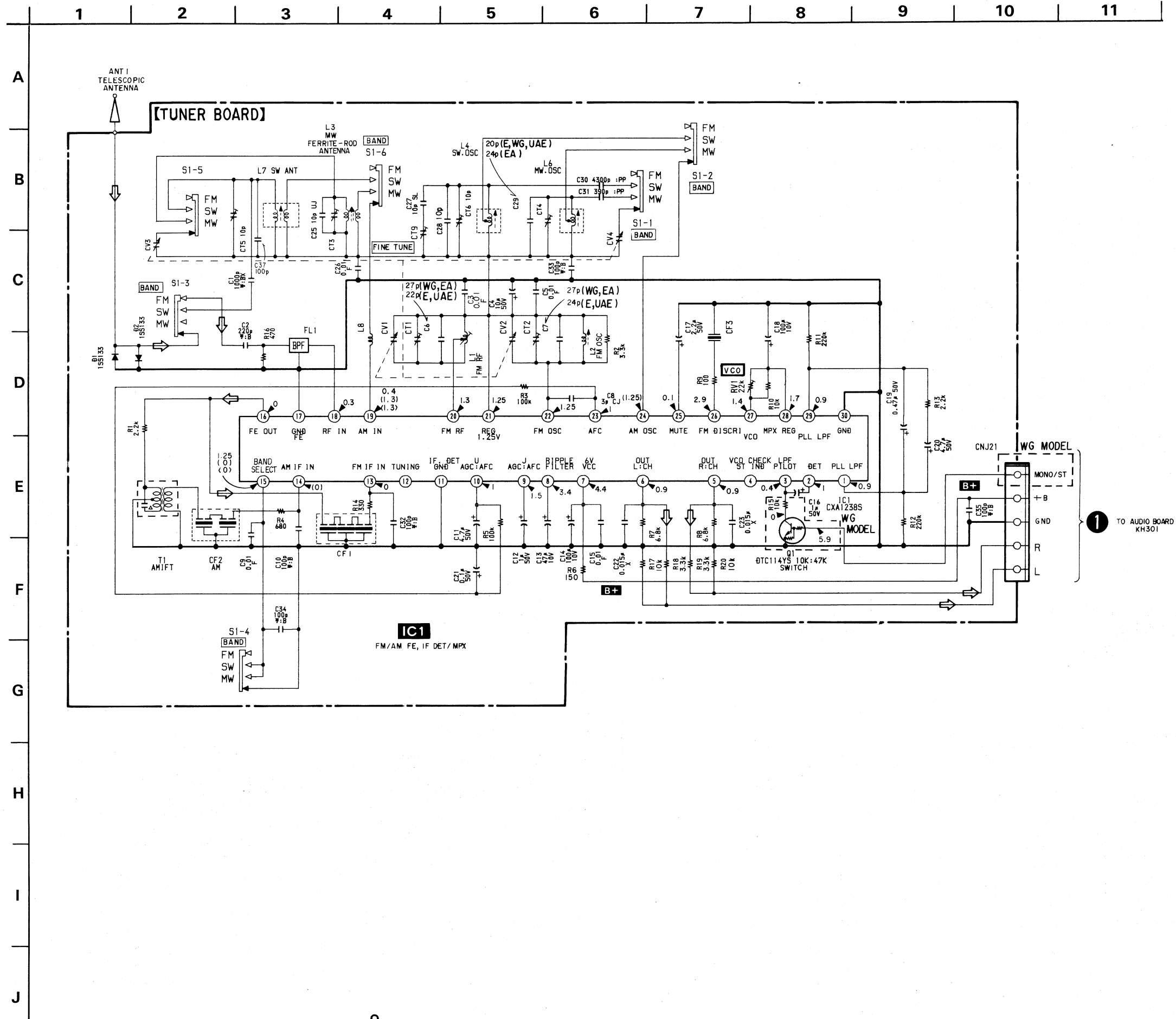
- WG: West Germany Model
- EA: Saudi Arabia model
- UAE: Unite Arab Emirates

• IC Block Diagram

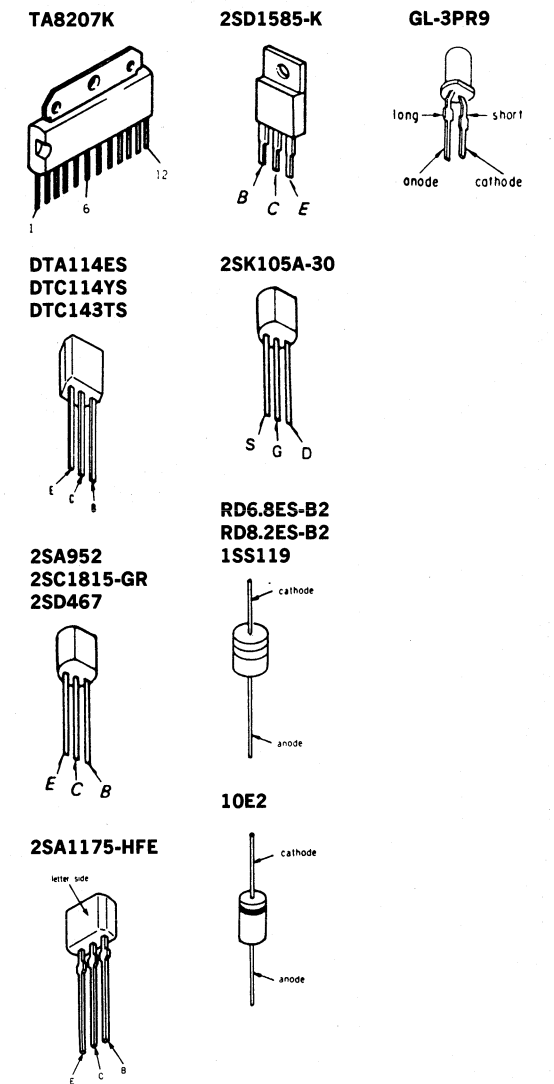
IC1 CXA1238S



5-2. SCHEMATIC DIAGRAM —TUNER SECTION—



5-3. SEMICONDUCTOR LEAD LAYOUT



Note:

- All capacitors are in μF unless otherwise noted. pF : μF 50WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and $\frac{1}{4}\text{W}$ or less unless otherwise specified.
- Δ : internal component.
- Power voltage is dc 9V and fed with regulated dc power supply from battery terminal.
- Voltages are dc with respect to ground under no-signal (detuned) conditions.
 - no mark: FM
 - (): MW
 - < >: SW
- Voltages are taken with a VOM (Input Impedance $10\text{M}\Omega$). Voltage variations may be noted due to normal production tolerances.
- Signal path.
 - $\Rightarrow$: FM
- WG: West Germany Model
- EA: Saudi Arabia model
- UAE: Unite Arab Emirates

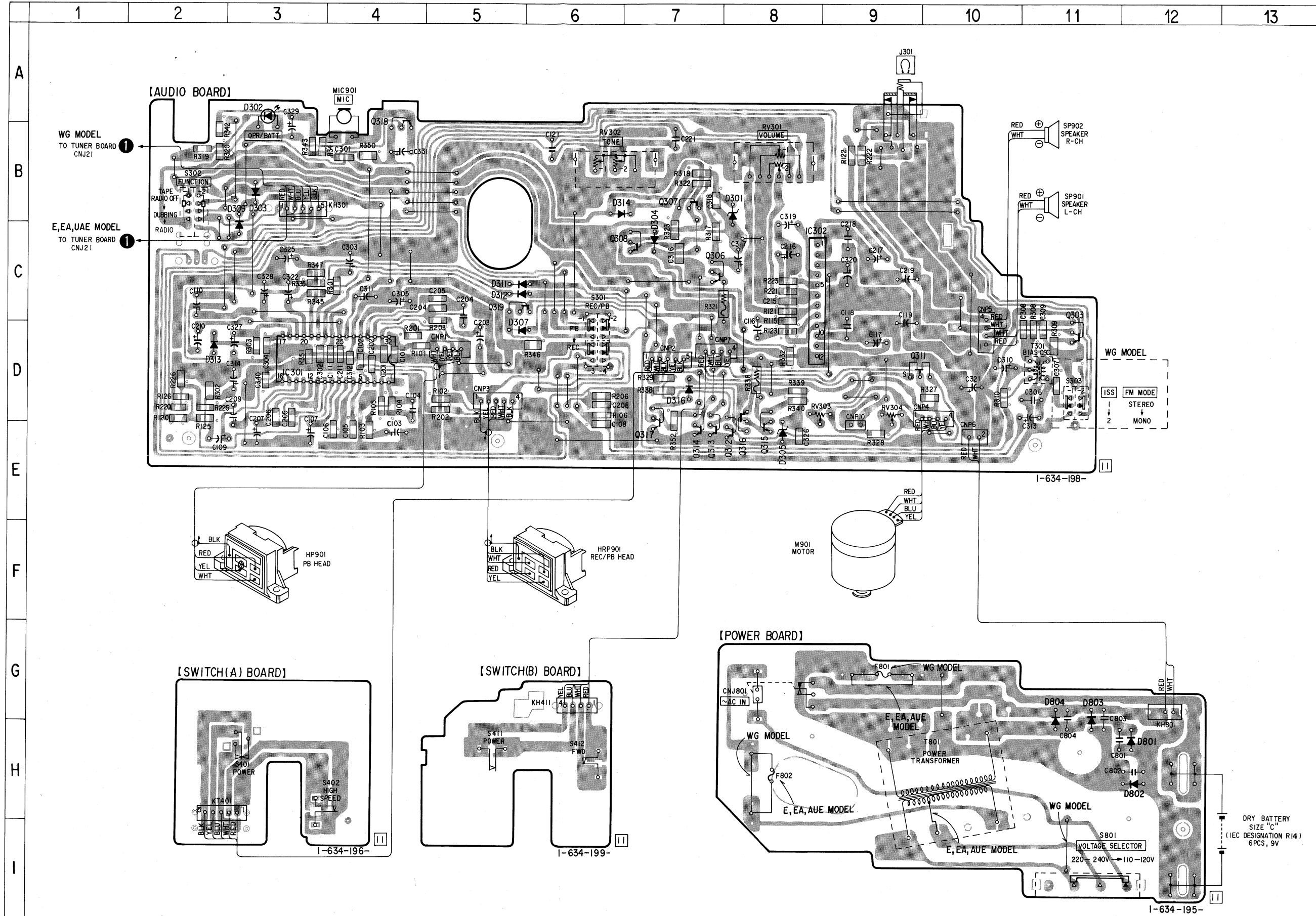
• Semiconductor Location

Ref. No.	Location
D301	B-8
D302	A-3
D303	B-3
D304	C-7
D305	E-8
D307	D-5
D309	B-3
D311	C-5
D312	C-5
D313	D-2
D314	B-6
D316	D-7
D801	H-12
D802	H-12
D803	G-11
D804	B-11
IC301	D-3
IC302	C-8
Q303	D-11
Q306	C-7
Q307	B-7
Q308	D-7
Q311	D-9
Q312	E-8
Q313	E-7
Q314	E-7
Q315	E-8
Q316	E-8
Q317	F-7
Q318	A-4
Q319	C-6

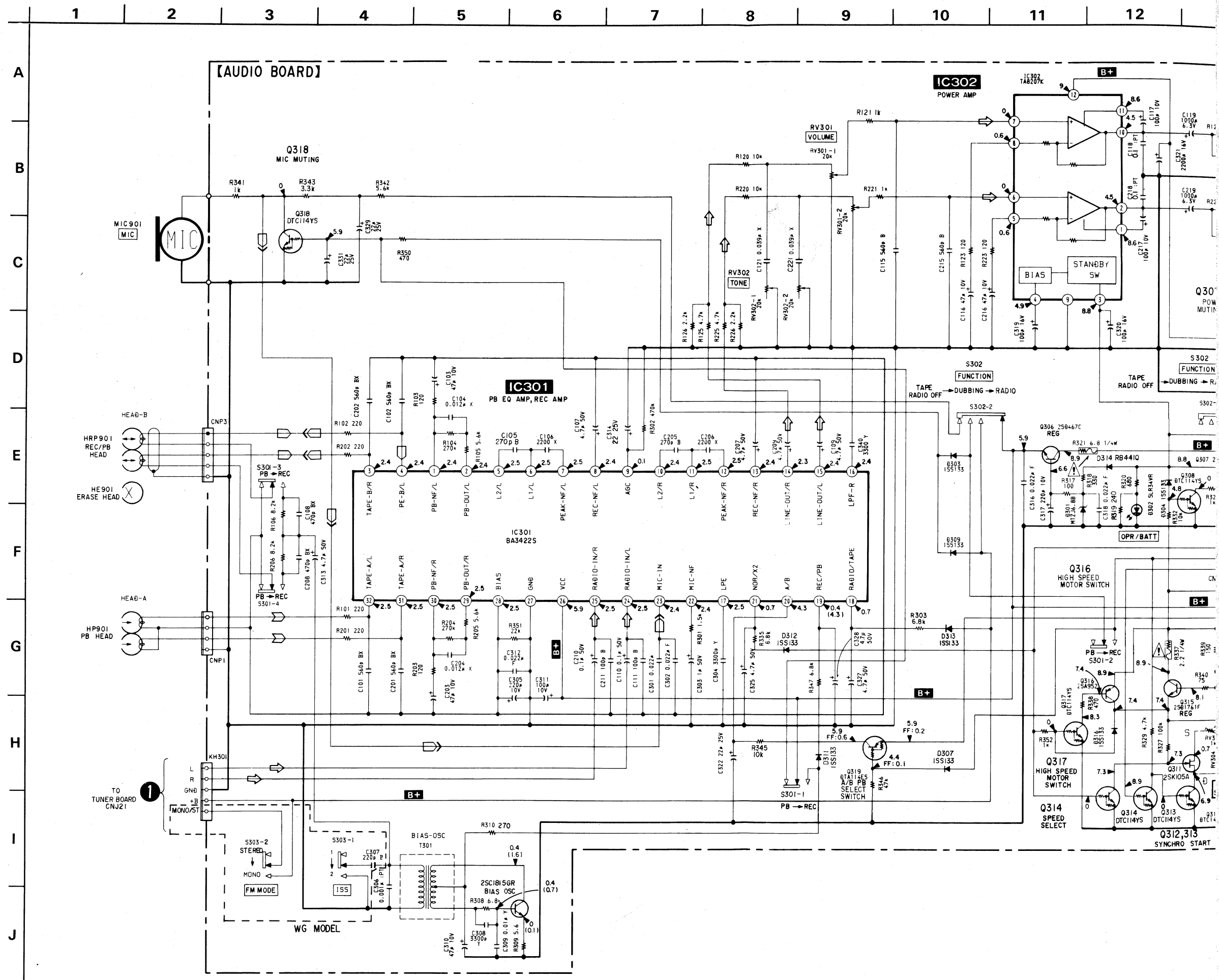
Note:

- — : parts extracted from the component side.
- WG: West Germany Model
- EA: Saudi Arabia model
- UAE: Unite Arab Emirates

5-4. PRINTED WIRING BOARD—AUDIO SECTION—



5-5. SCHEMATIC DIAGRAM —AUDIO SECTION—





	TAPE/AUX	REC/PB	A/B	NOR/×2
HIGH	AUX	REC	B-PB	×2
OPEN	TAPE	PB	A-PB	NOR



- All capacitors are in μF unless otherwise noted. pF : μF 50WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and $\frac{1}{4}\text{W}$ or less unless otherwise specified.
- : fusible resistor.

Note: The components identified by mark  or dotted line with mark  are critical for safety. Replace only with part number specified.

- Power voltage is dc 9V and fed with regulated dc power supply from battery terminal.
- Voltages are dc with respect to ground under no-signal (detuned) conditions.

no mark : PLAY

(): REC

- Voltages are taken with a VOM (Input Impedance $10M\Omega$). Voltage variations may be noted due to normal production tolerances.

- Signal path.
 - ➡ : FM
 - : PB (DECK A)
 - ⬢ : PB (DECK B)
 - : REC (DECK B)

- WG: West Germany Model
- EA: Saudi Arabia model
- UAE: Unite Arab Emirates

SECTION 6 EXPLODED VIEWS

NOTE:

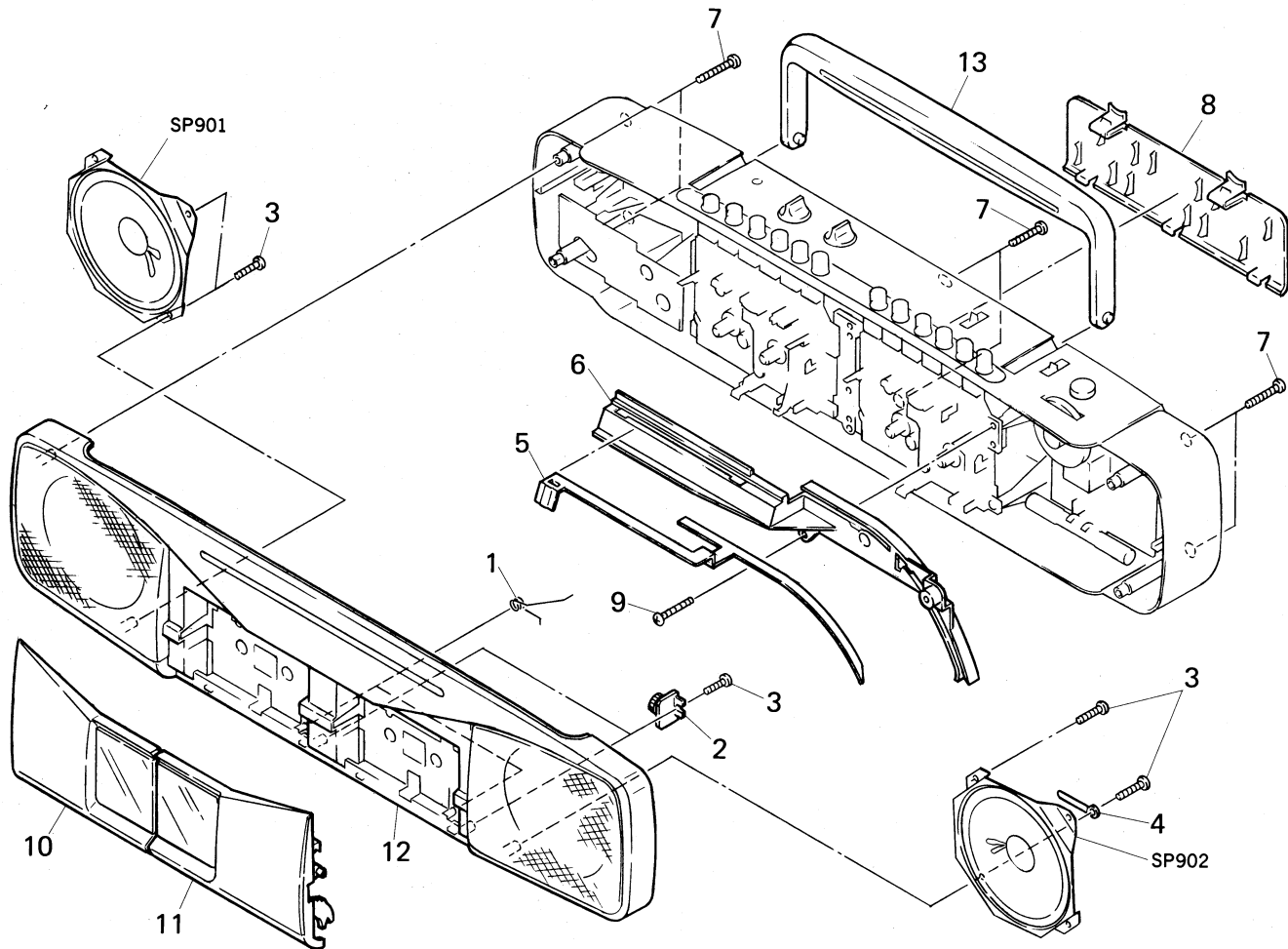
- The mechanical parts with no reference number in the exploded views are not supplied.
- The construction parts of an assembled part are indicated with a collation number in the remark column.
- Items marked "★" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.

- Due to standardization, parts with part number suffix -XX and -X may be different from the parts specified in the components used on the set.
- Color Indication of Appearance Parts
Example:
(RED) ... KNOB, BALANCE (WHITE)
↑ Cabinet's Color ↑ Parts Color

The components identified by mark  or dotted line with mark  are critical for safety. Replace only with part number specified.

- WG: West Germany Model
- EA: Saudi Arabia model
- UAE: Unite Arab Emirates

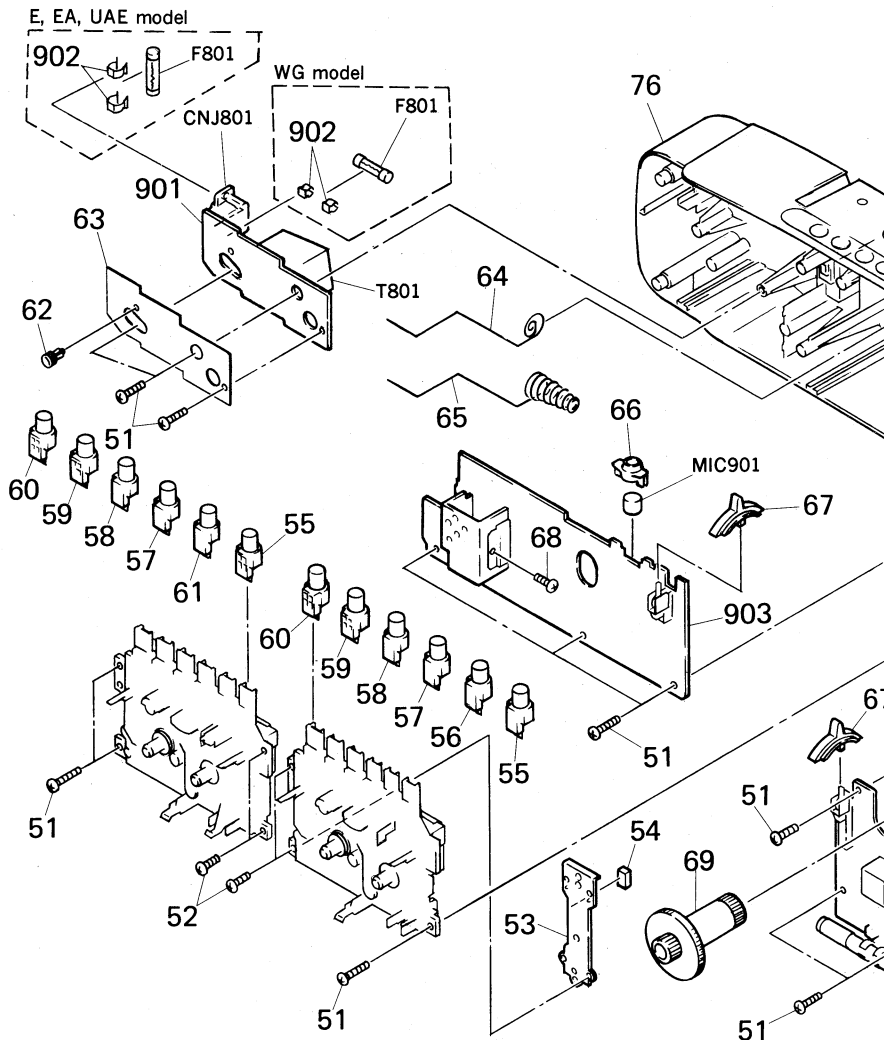
6-1. CABINET



Ref.No	Part No.	Description	Remarks
1	3-356-227-01	SPRING (CASSETTE)	
2	3-351-377-11	DAMPER	
3	7-685-648-79	SCREW + BVTP 3X12 TYPE2 IT-3	
4	3-703-150-11	STOPPER, WIRING	
5	3-357-536-01	POINTER	
6	3-357-524-01	CHASSIS (DIAL)	
7	7-685-651-79	SCREW + P 3X20 TYPE2 NON-SLIT	
8	3-357-521-01	(BLACK) ... LID, BATTERY CASE	
	3-357-521-11	(WHITE) ... LID, BATTERY CASE	
	3-357-521-21	(RED) ... LID, BATTERY CASE	
9	7-685-650-79	SCREW + BVTP 3X16 TYPE2 IT-3	
10	X-3340-301-1	(RED) ... HOLDER (L) ASSY, CASSETTE	
	X-3340-302-1	(WHITE) ... HOLDER (L) ASSY, CASSETTE	
	X-3340-303-1	(BLACK) ... HOLDER (L) ASSY, CASSETTE	

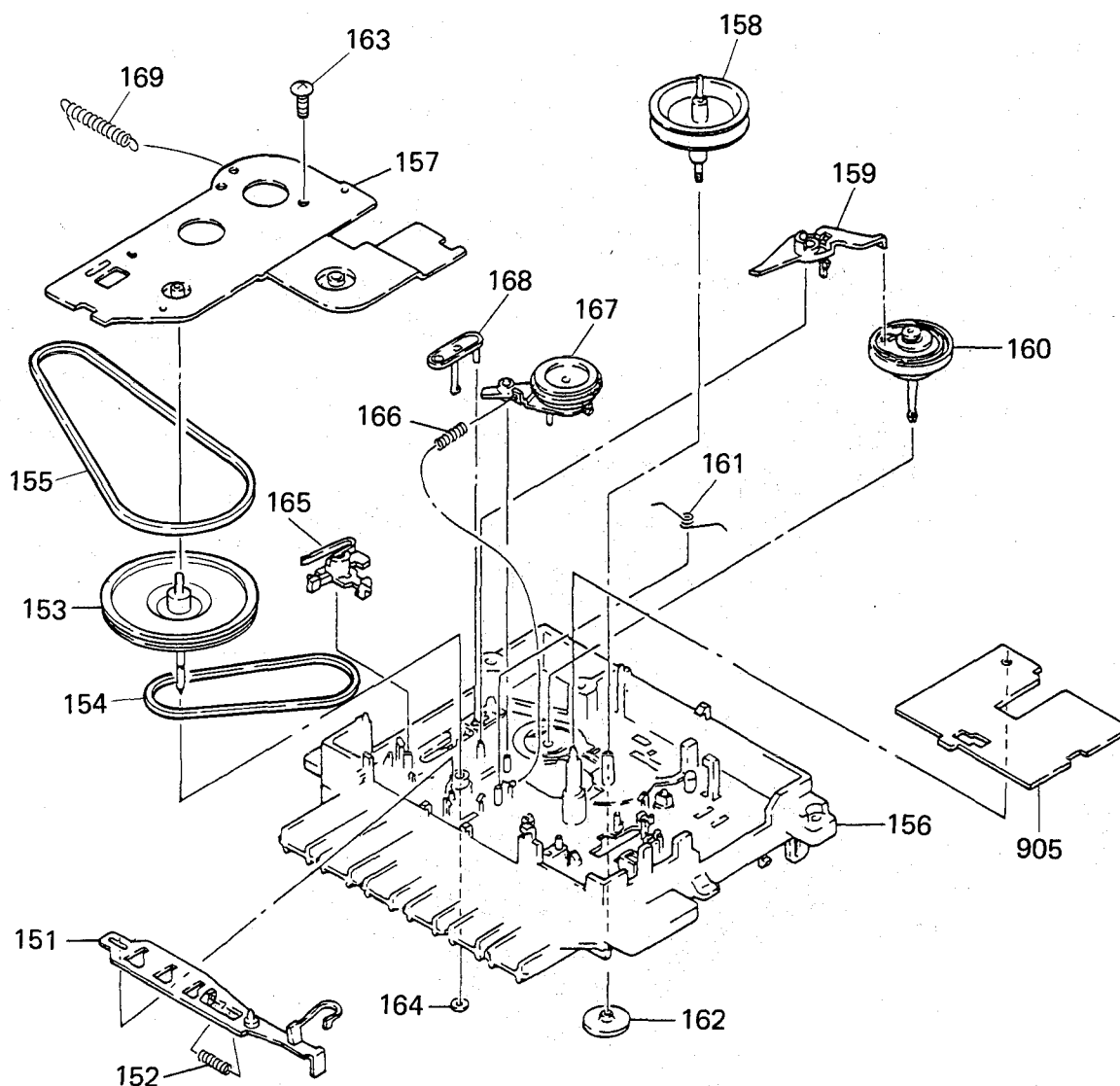
Ref.No	Part No.	Description	Remarks
11	X-3339-391-1	(RED) ... HOLDER (R) ASSY, CASSETTE	
	X-3339-393-1	(WHITE) ... HOLDER (R) ASSY, CASSETTE	
	X-3339-396-1	(BLACK) ... HOLDER (R) ASSY, CASSETTE	
12	X-3340-305-1	(EA, WG : RED) ... CABINET (FRONT) ASSY	
	X-3340-306-1	(E, UAE : RED) ... CABINET (FRONT) ASSY	
	X-3340-308-1	(EA, WG : WHITE) ... CABINET (FRONT) ASSY	
	X-3340-309-1	(E, UAE : WHITE) ... CABINET (FRONT) ASSY	
	X-3340-313-1	(EA, WG : BLACK) ... CABINET (FRONT) ASSY	
	X-3340-314-1	(E, UAE : BLACK) ... CABINET (FRONT) ASSY	
13	X-3339-387-1	(RED) ... HANDLE ASSY	
	X-3339-388-1	(WHITE) ... HANDLE ASSY	
	X-3339-389-1	(BLACK) ... HANDLE ASSY	
SP901	1-544-154-11	SPEAKER	
SP902	1-544-154-11	SPEAKER	

6-2. PC BOARDS, REAR CABINET



Ref.No	Part No.	Description	Remarks	Ref.No	Part No.	Description	Remarks
51	7-685-648-79	SCREW + BVTP 3X12 TYPE2 IT-3		75	3-351-313	SCREW + B 3X8	
52	7-682-548-04	SCREW + B 3X8		76	3-351-313	SCREW + B 3X8	
53	★ 4-934-517-01	JOINT		77	3-351-313	SCREW + B 3X8	
54	4-934-522-01	CUSHION		78	3-357-546	SCREW + B 3X8	
55	3-357-532-01	BUTTON (S/E)		79	3-357-546	SCREW + B 3X8	
56	3-357-531-01	BUTTON (HI SP)		80	3-357-546	SCREW + B 3X8	
57	3-357-530-01	BUTTON (PLAY)		81	3-357-546	SCREW + B 3X8	
58	3-357-529-01	BUTTON (REW)		82	3-357-546	SCREW + B 3X8	
59	3-357-528-01	BUTTON (FF)		83	3-357-546	SCREW + B 3X8	
60	3-357-527-01	BUTTON (PAUSE)		84	3-357-546	SCREW + B 3X8	
61	3-357-533-01	BUTTON (REC)		85	3-357-546	SCREW + B 3X8	
62	4-812-134-00	(WG) ... RIVET NYLON, 3.5		86	3-357-546	SCREW + B 3X8	
63	3-357-544-01	(WG) ... SHEET, INSULATING		87	3-357-546	SCREW + B 3X8	
64	3-357-539-01	TERMINAL, PLUS		88	3-357-546	SCREW + B 3X8	
65	3-357-540-01	SPRING (-), BATTERY COIL		89	3-357-546	SCREW + B 3X8	
66	3-321-122-01	CUSHION, MICROPHONE		90	3-357-546	SCREW + B 3X8	
67	3-343-062-11	(WHITE) ... KNOB (FUNCTION)		91	3-357-546	SCREW + B 3X8	
	3-343-062-21	(RED) ... KNOB (FUNCTION)		92	3-357-546	SCREW + B 3X8	
	3-343-062-31	(BLACK) ... KNOB (FUNCTION)		93	3-357-546	SCREW + B 3X8	
68	7-685-870-01	SCREW BVTT 3X5 (S)		94	3-357-546	SCREW + B 3X8	
69	3-357-525-01	KNOB (TUNING)		95	3-357-546	SCREW + B 3X8	
70	3-338-505-01	DRUM, TUNING CAPACITOR		96	3-357-546	SCREW + B 3X8	
71	7-621-773-86	SCREW P 2.6X4		97	3-357-546	SCREW + B 3X8	
72	3-357-542-01	TERMINAL, ANTENNA		98	3-357-546	SCREW + B 3X8	
73	3-357-541-01	SPRING (+), BATTERY COIL		99	3-357-546	SCREW + B 3X8	
74	3-351-338-11	(WHITE) ... KNOB (VOL)		100	3-357-546	SCREW + B 3X8	
	3-351-338-21	(RED) ... KNOB (VOL)					
	3-351-338-31	(BLACK) ... KNOB (VOL)					

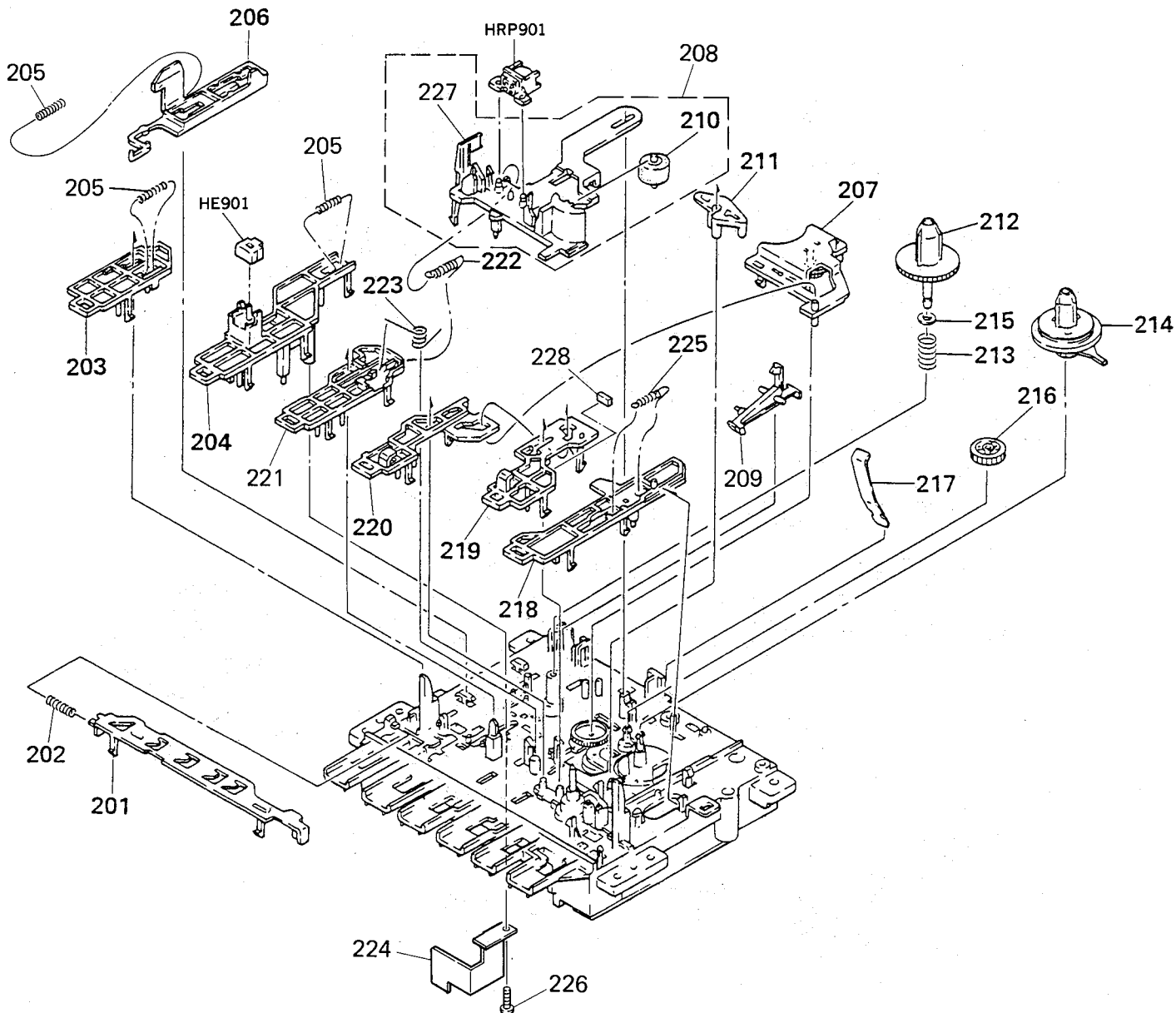
6-4. DECK A TAPE MECHANISM(2) (MF-W304-64)



Ref.No	Part No.	Description	Remarks
151	4-928-996-01	LEVER, SW	
152	4-932-656-01	SPRING, COMPRESSION	
153	X-4920-923-1	WHEEL (W) ASSY, CAPSTAN	
154	4-928-974-01	BELT (MIDWAY)	
155	4-934-520-01	BELT	
156	X-4920-348-1	CHASSIS (S) ASSY, MECHANICAL	
157	*X-4918-598-1	PLATE ASSY, GROUND	
158	X-4920-922-1	PULLEY (W) ASSY, FR	
159	4-928-986-01	LEVER (S), SHUT-OFF	
160	X-4918-582-1	PLATE ASSY, TAKE-UP REEL	

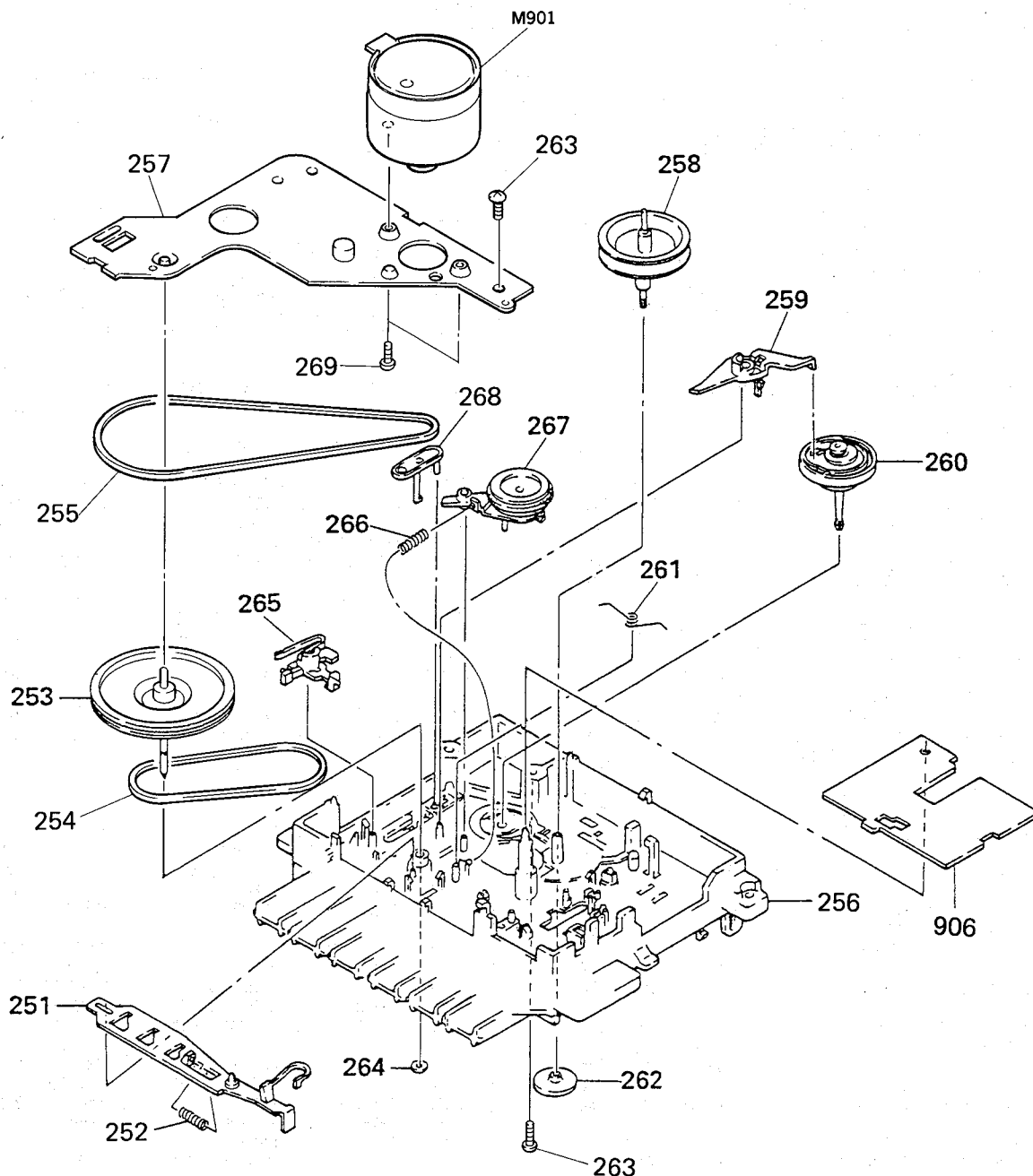
Ref.No	Part No.	Description	Remarks
161	4-928-958-01	SPRING, FR RETURN	
162	4-928-967-01	GEAR (C), MIDWAY	
163	7-685-144-19	SCREW +P 3X5 TYPE2 NON-SLIT	
164	3-343-358-01	RING, RETAINING	
165	4-928-987-01	LEVER (T), SHUT-OFF	
166	4-932-655-01	SPRING, COMPRESSION	
167	X-4920-346-1	LEVER (S) ASSY, IDLER	
168	4-928-961-01	PLATE, PAUSE LOCK	
169	3-322-527-01	SPRING, TENSION	
905	*1-634-196-11	PC BOARD, SWITCH (A)	

6-5. DECK B TAPE MECHANISM(1)
(MF-W304-64)



<u>Ref.No</u>	<u>Part No.</u>	<u>Description</u>	<u>Remarks</u>	<u>Ref.No</u>	<u>Part No.</u>	<u>Description</u>	<u>Remarks</u>
201	4-932-695-01	SLIDER (FR), LOCK		216	3-343-285-01	GEAR, FF	
202	4-932-656-01	SPRING, COMPRESSION		217	4-928-957-01	RETAINER, CASSETTE	
203	4-928-985-01	LEVER, STOP		218	4-928-994-01	LEVER, PAUSE	
204	4-934-511-01	LEVER (S), REC		219	4-928-993-01	LEVER, FF	
205	4-932-648-01	SPRING, COMPRESSION		220	4-928-992-01	LEVER, REW	
206	4-936-206-01	SLIDER (S), EJECT		221	4-928-991-01	LEVER, PLAY	
207	X-4920-347-1	LEVER (S) ASSY, FR		222	4-928-972-01	SPRING, TENSION	
208	X-4920-345-1	BASE (S) ASSY, HEAD	210, 227	223	4-928-973-01	SPRING	
209	4-928-960-02	CLAW, SAFETY		224	3-357-538-01	LEVER, REC	
210	4-928-962-01	PINCH ROLLER		225	3-313-372-01	SPRING, TENSION	
211	4-928-982-01	LEVER (C)		226	7-685-132-19	SCREW +P 2.6X5 TYPE2 NON-SLIT	
212	4-928-978-01	GEAR (C), SUPPLY REEL		227	4-932-693-02	DECK (S), HEAD	
213	3-343-381-01	SPRING, COMPRESSION		228	3-357-597-01	SHEET, FF	
214	X-4918-585-5	GEAR (C) ASSY, TAKE-UP REEL		HE901	1-543-525-11	HEAD, MAGNETIC (ERASE)	
215	4-931-795-11	WASHER		HRP901	1-543-714-11	HEAD, MAGNETIC (REC/PB)	

6-6. DECK B TAPE MECHANISM(2) (MF-W304-64)



Ref.No	Part No.	Description	Remarks
251	4-928-996-01	LEVER, SW	
252	4-932-656-01	SPRING, COMPRESSION	
253	X-4920-923-1	WHEEL (W) ASSY, CAPSTAN	
254	4-928-974-01	BELT (MIDWAY)	
255	4-934-521-01	BELT	
256	X-4920-348-1	CHASSIS (S) ASSY, MECHANICAL	
257	X-4920-921-1	PLATE (W) ASSY, GROUND	
258	X-4920-922-1	PULLEY (W) ASSY, FR	
259	4-928-986-01	LEVER (S), SHUT-OFF	
260	X-4918-582-1	PLATE ASSY, TAKE-UP REEL	
261	4-928-958-01	SPRING, FR RETURN	

Ref.No	Part No.	Description	Remarks
262	4-928-967-01	GEAR (C), MIDWAY	
263	7-685-132-19	SCREW +P 2.6X5 TYPE2 NON-SLIT	
264	3-343-358-01	RING, RETAINING	
265	4-928-987-01	LEVER (T), SHUT-OFF	
266	4-932-655-01	SPRING, COMPRESSION	
267	X-4920-346-1	LEVER (S) ASSY, IDLER	
268	4-928-961-01	PLATE, PAUSE LOCK	
269	3-343-251-01	SCREW (M2.6X2.5)	
906	*1-634-199-11	PC BOARD, SWITCH (B)	
M901	X-4920-924-1	MOTOR ASSY	

SECTION 7 ELECTRICAL PARTS LIST

NOTE:

- Due to standardization, replacements in the parts list may be different from the parts specified in the diagrams or the components used on the set.
- Items marked "★" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- If there are two or more same circuits in a set such as a stereophonic machine, only typical circuit parts may be indicated and capacitors and resistors in other same circuits may be omitted.

CAPACITORS:MF: μ F, PF: μ MF.**RESISTORS**

- All resistors are in ohms.
- F: nonflammable

COILS

- MMH: mH, UH: μ H

SEMICONDUCTORSIn each case, U: μ , for example:UA...: μ A..., UPA...: μ PA...,UPC...: μ PC, UPD...: μ PD...

The components identified by mark Δ or dotted line with mark Δ are critical for safety. Replace only with part number specified.

- WG: West Germany Model
- EA: Saudi Arabia model
- UAE: Unite Arab Emirates

Ref.No	Part No.	Description				
901	*1-634-195-11	PC BOARD, POWER				
902	1-533-217-31	HOLDER, FUSE				
903	*A-3270-751-A	(WG)....MOUNTED PCB, MAIN				
903	*A-3270-752-A	(E, EA, UAE)....MOUNTED PCB, MAIN				
904	*A-3266-634-A	(WG)....MOUNTED PCB, TUNER				
904	*A-3266-635-A	(E, UAE)....MOUNTED PCB, TUNER				
904	*A-3266-641-A	(EA)....MOUNTED PCB, TUNER				
ANT1	1-501-378-11	ANTENNA, TELESCOPIC				
CAPACITOR						
C1	1-162-294-31	CERAMIC	0.001MF	10%	50V	
C2	1-162-286-31	CERAMIC	220PF	10%	50V	
C3	1-164-096-11	CERAMIC	0.01MF		50V	
C4	1-123-875-11	ELECT	10MF	20%	50V	
C5	1-164-096-11	CERAMIC	0.01MF		50V	
C6	1-164-054-11	(E, UAE).... CERAMIC	22PF	5%	50V	
C6	1-164-056-11	(WG, EA).... CERAMIC	27PF	5%	50V	
C7	1-101-982-11	(E, UAE).... CERAMIC	24PF	5%	50V	
C7	1-102-961-00	(WG)....CERAMIC	27PF	5%	50V	
C7	1-102-961-00	(EA)....CERAMIC	27PF	5%	50V	
C8	1-164-012-11	CERAMIC	3PF	0.25PF	50V	
C9	1-164-096-11	CERAMIC	0.01MF		50V	
C10	1-162-282-31	CERAMIC	100PF	10%	50V	
C11	1-124-927-11	ELECT	4.7MF	20%	50V	
C12	1-124-791-11	ELECT	1MF	20%	50V	
C13	1-124-446-11	ELECT	47MF	20%	10V	
C14	1-124-443-00	ELECT	100MF	20%	10V	
C15	1-164-096-11	CERAMIC	0.01MF		50V	
C16	1-124-791-11	ELECT	1MF	20%	50V	
C17	1-124-925-11	ELECT	2.2MF	20%	50V	
C18	1-124-443-00	ELECT	100MF	20%	10V	
C19	1-124-902-00	ELECT	0.47MF	20%	50V	
C20	1-124-927-11	ELECT	4.7MF	20%	50V	
C21	1-124-463-00	ELECT	0.1MF	20%	50V	
C22	1-161-053-00	CERAMIC	0.015MF	10%	16V	
C23	1-161-053-00	CERAMIC	0.015MF	10%	16V	
C25	1-102-947-00	CERAMIC	10PF	0.5PF	50V	
C26	1-164-096-11	CERAMIC	0.01MF		50V	
C27	1-164-046-11	CERAMIC	10PF	0.5PF	50V	
C28	1-102-947-00	CERAMIC	10PF	0.5PF	50V	
C29	1-102-958-00	(E, WG, UAE).... CERAMIC	20PF	5%	50V	
C29	1-102-960-00	(EA)....CERAMIC	24PF	5%	50V	
C30	1-136-307-11	FILM	0.0043MF	5%	50V	
C31	1-130-013-00	FILM	390PF	5%	50V	
C32	1-162-282-31	CERAMIC	100PF	10%	50V	
C33	1-162-282-31	CERAMIC	100PF	10%	50V	
C34	1-162-282-31	CERAMIC	100PF	10%	50V	
C35	1-162-282-31	CERAMIC	100PF	10%	50V	
C37	1-162-282-31	CERAMIC	100PF	10%	50V	
C101	1-163-199-00	CERAMIC MELF	560PF	10%	50V	

Ref.No	Part No.	Description				
C102	1-163-199-00	CERAMIC MELF	560PF	10%	50V	
C103	1-124-446-11	ELECT	47MF	20%	10V	
C104	1-162-840-11	CERAMIC	0.012MF	10%	16V	
C105	1-163-191-00	CERAMIC MELF	270PF	10%	50V	
C106	1-163-213-00	CERAMIC MELF	0.0022MF	20%	16V	
C107	1-124-927-11	ELECT	4.7MF	20%	50V	
C108	1-163-197-00	CERAMIC MELF	470PF	10%	50V	
C109	1-124-927-11	ELECT	4.7MF	20%	50V	
C110	1-124-463-00	ELECT	0.1MF	20%	50V	
C111	1-163-181-00	CERAMIC MELF	100PF	10%	50V	
C115	1-163-199-00	CERAMIC MELF	560PF	10%	50V	
C116	1-124-446-11	ELECT	47MF	20%	10V	
C117	1-124-443-00	ELECT	100MF	20%	10V	
C118	1-130-495-00	MYLAR	0.1MF	5%	50V	
C119	1-124-471-00	ELECT	1000MF	20%	6.3V	
C121	1-161-020-11	CERAMIC	0.039MF	10%	16V	
C201	1-163-199-00	CERAMIC MELF	560PF	10%	50V	
C202	1-163-199-00	CERAMIC MELF	560PF	10%	50V	
C203	1-124-446-11	ELECT	47MF	20%	10V	
C204	1-162-840-11	CERAMIC	0.012MF	10%	16V	
C205	1-163-191-00	CERAMIC MELF	270PF	10%	50V	
C206	1-163-213-00	CERAMIC MELF	0.0022MF	20%	16V	
C207	1-124-927-11	ELECT	4.7MF	20%	50V	
C208	1-163-197-00	CERAMIC MELF	470PF	10%	50V	
C209	1-124-927-11	ELECT	4.7MF	20%	50V	
C210	1-124-463-00	ELECT	0.1MF	20%	50V	
C211	1-163-181-00	CERAMIC MELF	100PF	10%	50V	
C215	1-163-199-00	CERAMIC MELF	560PF	10%	50V	
C216	1-124-446-11	ELECT	47MF	20%	10V	
C217	1-124-443-00	ELECT	100MF	20%	10V	
C218	1-130-495-00	MYLAR	0.1MF	5%	50V	
C219	1-124-471-00	ELECT	1000MF	20%	6.3V	
C221	1-161-020-11	CERAMIC	0.039MF	10%	16V	
C301	1-163-063-00	CERAMIC MELF	0.022MF		25V	
C302	1-163-063-00	CERAMIC MELF	0.022MF		25V	
C303	1-124-791-11	ELECT	1MF	20%	50V	
C304	1-163-053-00	CERAMIC MELF	0.0033MF	20%	16V	
C305	1-126-176-11	ELECT	220MF	20%	10V	
C306	1-130-471-00	MYLAR	0.001MF	5%	50V	
C307	1-163-189-00	(WG).... CERAMIC MELF	220PF	10%	50V	
C308	1-163-053-00	CERAMIC MELF	0.0033MF	20%	16V	
C309	1-163-059-00	CERAMIC MELF	0.01MF	20%	16V	
C310	1-124-446-11	ELECT	47MF	20%	10V	
C311	1-124-443-00	ELECT	100MF	20%	10V	
C312	1-163-063-00	CERAMIC MELF	0.022MF		25V	
C313	1-124-791-11	ELECT	1MF	20%	50V	
C313	1-124-927-11	ELECT	4.7MF	20%	50V	
C314	1-126-233-11	ELECT	22MF	20%	25V	
C316	1-163-063-00	CERAMIC MELF	0.022MF		25V	
C317	1-126-176-11	ELECT	220MF	20%	10V	
C318	1-163-063-00	CERAMIC MELF	0.022MF		25V	
C319	1-126-101-11	ELECT	100MF	20%	16V	
C320	1-126-101-11	ELECT	100MF	20%	16V	
C321	1-124-556-11	ELECT	2200MF	20%	16V	

Ref.No	Part No.	Description			
C322	1-126-233-11	ELECT	22MF	20%	25V
C325	1-124-927-11	ELECT	4.7MF	20%	50V
C326	1-163-063-00	CERAMIC MELF	0.022MF		25V
C327	1-124-927-11	ELECT	4.7MF	20%	50V
C328	1-124-927-11	ELECT	4.7MF	20%	50V
C329	1-126-233-11	ELECT	22MF	20%	25V
C331	1-126-233-11	ELECT	22MF	20%	25V
C340	1-163-053-00	CERAMIC MELF	0.0033MF	20%	16V
C801	1-101-005-00	CERAMIC	0.022MF		50V
C802	1-101-005-00	CERAMIC	0.022MF		50V
C803	1-101-005-00	CERAMIC	0.022MF		50V
C804	1-101-005-00	CERAMIC	0.022MF		50V
CF1	1-567-166-00	FILTER, CERAMIC			
CF2	1-567-670-11	FILTER, CERAMIC			
CF3	1-567-166-00	FILTER, CERAMIC			
CNJ21	*1-568-270-11	(E, EA, UAE)... SOCKET, CONNECTOR 4P			
CNJ21	*1-568-271-11	(WG)... SOCKET, CONNECTOR 5P			
CNJ801	△1-526-838-11	INLET, AC 2P (∼AC IN)			
CNP1	*1-506-986-11	PIN, CONNECTOR (PC BOARD) 4P			
CNP2	*1-506-987-11	PIN, CONNECTOR (PC BOARD) 5P			
CNP3	*1-506-987-11	PIN, CONNECTOR (PC BOARD) 5P			
CNP4	*1-506-986-11	PIN, CONNECTOR (PC BOARD) 4P			
CNP5	*1-506-986-11	PIN, CONNECTOR (PC BOARD) 4P			
CNP6	*1-506-984-11	PIN, CONNECTOR (PC BOARD) 2P			
CNP7	*1-506-986-11	PIN, CONNECTOR (PC BOARD) 4P			
CNP10	*1-560-530-00	PIN, CONNECTOR 2P			
CT5	1-141-290-41	CAP, VAR FILM TRIMMER			
CT6	1-141-290-41	CAP, VAR FILM TRIMMER			
CT9	1-141-328-11	CAP, TRIMMER			
CV1-4	1-151-637-11	CAP, VARIABLE			
CT1-4					
D1	8-719-911-19	DIODE 1SS119			
D2	8-719-911-19	DIODE 1SS119			
D301	8-719-109-97	DIODE RD6.8ES-B2			
D302	8-719-918-76	DIODE GL-3PR9			
D303	8-719-911-19	DIODE 1SS119			
D304	8-719-911-19	DIODE 1SS119			
D305	8-719-110-08	DIODE RD8.2ES-B2			
D307	8-719-911-19	DIODE 1SS119			
D309	8-719-911-19	DIODE 1SS119			
D311	8-719-911-19	DIODE 1SS119			
D312	8-719-911-19	DIODE 1SS119			
D313	8-719-911-19	DIODE 1SS119			
D314	8-719-986-74	DIODE RB441QT-77			
D316	8-719-911-19	DIODE 1SS119			
D801	8-719-200-02	DIODE 10E2			
D802	8-719-200-02	DIODE 10E2			
D803	8-719-200-02	DIODE 10E2			
D804	8-719-200-02	DIODE 10E2			
F801	△1-532-285-00	(WG)... FUSE, TIME-LAG (1.25A)			
F802	△1-532-611-00	(E, EA, UAE)... FUSE, TIME-LAG (0.125A)			
FL1	1-236-022-11	FILTER, BAND PASS			
HE901	1-543-525-11	HEAD, MAGNETIC (ERASE)			
HP901	1-543-714-11	HEAD, MAGNETIC (PB)			
HRP901	1-543-714-11	HEAD, MAGNETIC (REC/PB)			
IC1	8-752-035-68	IC CXA1238S			
IC301	8-759-501-37	IC BA3422S			
IC302	8-759-230-13	IC TA8207K			
J301	1-568-267-11	JACK (HEADPHONE)			

Ref.No	Part No.	Description
KH801	*1-565-384-11	HOLDER, CABLE 3P
KT401	*1-565-386-11	HOLDER, CABLE 5P
L1	*1-422-180-11	(WG, EA)... COIL, AIR-CORE (RF)
L1	1-420-855-00	(E, UAE)... COIL, FM ANT
L2	1-459-815-11	(WG, EA)... COIL (WITH CORE)
L2	1-406-161-11	(E, UAE)... COIL, FM OSCILLATOR
L3	1-402-418-11	ANTENNA, FERRITE-ROD(LW/MW/SW)
L4	1-406-356-11	COIL (OSC)
L6	1-406-253-11	COIL (OSC)
L7	1-402-312-11	COIL (ANT)
L8	*1-409-293-00	COIL, AIR CORE
M901	X-4920-924-1	MOTOR ASSY
MIC901	1-542-092-11	MICROPHONE, ELECTRET CONDENSER
Q1	8-729-904-36	TRANSISTOR DTC114YS
Q303	8-729-281-53	TRANSISTOR 2SC1815-GR
Q306	1-808-455-21	TRANSISTOR 2SD467
Q307	8-729-119-76	TRANSISTOR 2SA1175-HFE
Q308	8-729-904-36	TRANSISTOR DTC114YS
Q311	8-729-115-30	TRANSISTOR 2SK105A-30
Q312	8-729-900-74	TRANSISTOR DTC143TS
Q313	8-729-904-36	TRANSISTOR DTC114YS
Q314	8-729-904-36	TRANSISTOR DTC114YS
Q315	8-729-107-26	TRANSISTOR 2SD1585-K
Q316	8-729-195-23	TRANSISTOR 2SA952
Q317	8-729-904-36	TRANSISTOR DTC114YS
Q318	8-729-904-36	TRANSISTOR DTC114YS
Q319	8-729-900-61	TRANSISTOR DTA114ES

RESISTOR

R1	1-249-421-11	CARBON	2.2K	5%	1/4W
R2	1-249-423-11	CARBON	3.3K	5%	1/4W
R3	1-249-441-11	CARBON	100K	5%	1/4W
R4	1-249-415-11	CARBON	680	5%	1/4W
R5	1-249-441-11	CARBON	100K	5%	1/4W
R6	1-249-407-11	CARBON	150	5%	1/4W
R7	1-249-427-11	CARBON	6.8K	5%	1/4W
R8	1-249-427-11	CARBON	6.8K	5%	1/4W
R9	1-249-405-11	CARBON	100	5%	1/4W
R10	1-249-429-11	CARBON	10K	5%	1/4W
R11	1-247-887-00	CARBON	220K	5%	1/4W
R12	1-247-887-00	CARBON	220K	5%	1/4W
R13	1-249-421-11	CARBON	2.2K	5%	1/4W
R14	1-249-411-11	CARBON	330	5%	1/4W
R16	1-249-413-11	CARBON	470	5%	1/4W
R17	1-249-429-11	CARBON	10K	5%	1/4W
R18	1-249-423-11	CARBON	3.3K	5%	1/4W
R19	1-249-423-11	CARBON	3.3K	5%	1/4W
R20	1-249-429-11	CARBON	10K	5%	1/4W
R101	1-249-409-11	CARBON MELF	220	5%	1/8W
R102	1-249-409-11	CARBON MELF	220	5%	1/8W
R103	1-249-406-11	CARBON MELF	120	5%	1/8W
R104	1-215-479-00	CARBON MELF	270K	5%	1/8W
R105	1-249-426-11	CARBON MELF	5.6K	5%	1/8W
R106	1-249-428-11	CARBON MELF	8.2K	5%	1/8W
R120	1-249-429-11	CARBON MELF	10K	5%	1/8W
R121	1-249-417-11	CARBON MELF	1K	5%	1/8W
R122	1-249-403-11	CARBON MELF	68	5%	1/8W
R123	1-249-406-11	CARBON MELF	120	5%	1/8W
R125	1-249-425-11	CARBON MELF	4.7K	5%	1/8W
R126	1-249-421-11	CARBON MELF	2.2K	5%	1/8W
R201	1-249-409-11	CARBON MELF	220	5%	1/8W
R202	1-249-409-11	CARBON MELF	220	5%	1/8W
R203	1-249-406-11	CARBON MELF	120	5%	1/8W

Note: The components identified by mark △ or dotted line with mark △ are critical for safety. Replace only with part number specified.

Ref.No	Part No.	Description			
R204	1-215-479-00	CARBON MELF	270K	5%	1/8W
R205	1-249-426-11	CARBON MELF	5.6K	5%	1/8W
R206	1-249-428-11	CARBON MELF	8.2K	5%	1/8W
R220	1-249-429-11	CARBON MELF	10K	5%	1/8W
R221	1-249-417-11	CARBON MELF	1K	5%	1/8W
R222	1-249-403-11	CARBON MELF	68	5%	1/8W
R223	1-249-406-11	CARBON MELF	120	5%	1/8W
R225	1-249-425-11	CARBON MELF	4.7K	5%	1/8W
R226	1-249-421-11	CARBON MELF	2.2K	5%	1/8W
R301	1-249-419-11	CARBON MELF	1.5K	5%	1/8W
R302	1-215-485-00	CARBON MELF	470K	5%	1/8W
R303	1-249-427-11	CARBON MELF	6.8K	5%	1/8W
R308	1-249-427-11	CARBON MELF	6.8K	5%	1/8W
R309	1-249-390-11	CARBON MELF	5.6	5%	1/8W
R310	1-249-410-11	CARBON MELF	270	5%	1/8W
R317	1-249-405-11	CARBON MELF	100	5%	1/8W
R318	1-249-411-11	CARBON MELF	330	5%	1/8W
R319	1-215-406-00	CARBON MELF	240	5%	1/8W
R320	1-249-415-11	CARBON MELF	680	5%	1/8W
R321	△1-217-642-00	FUSIBLE	6.8	5%	1/4W F
R322	1-249-441-11	CARBON MELF	100K	5%	1/8W
R323	1-249-417-11	CARBON MELF	1K	5%	1/8W
R327	1-249-441-11	CARBON MELF	100K	5%	1/8W
R328	1-249-423-11	CARBON MELF	3.3K	5%	1/8W
R329	1-249-425-11	CARBON MELF	4.7K	5%	1/8W
R332	1-249-429-11	CARBON MELF	10K	5%	1/8W
R335	1-249-427-11	CARBON MELF	6.8K	5%	1/8W
R337	△1-217-639-00	FUSIBLE	2.2	5%	1/4W F
R338	1-249-413-11	CARBON	470	5%	1/8W
R339	1-249-407-11	CARBON MELF	150	5%	1/8W
R340	1-215-394-00	CARBON MELF	75	5%	1/8W
R341	1-249-417-11	CARBON MELF	1K	5%	1/8W
R342	1-249-426-11	CARBON MELF	5.6K	5%	1/8W
R343	1-249-423-11	CARBON MELF	3.3K	5%	1/8W
R345	1-249-429-11	CARBON MELF	10K	5%	1/8W
R346	1-249-437-11	CARBON MELF	47K	5%	1/8W
R347	1-249-427-11	CARBON MELF	6.8K	5%	1/8W
R350	1-249-413-11	CARBON MELF	470	5%	1/8W
R351	1-249-433-11	CARBON MELF	22K	5%	1/8W
R352	1-249-417-11	CARBON MELF	1K	5%	1/8W
RV1	1-238-601-11	RES, ADJ, CARBON 22K			
RV301	1-238-430-11	RES, VAR, CARBON 20K/20K (VOLUME)			
RV302	1-238-431-11	RES, VAR, CARBON 20K/20K (TONE)			
RV303	1-241-036-21	RES, ADJ, CARBON 1K			
RV304	1-241-036-21	RES, ADJ, CARBON 1K			
S1	1-554-868-11	SWITCH, LEVER SLIDE (BAND)			
S301	1-572-325-11	SWITCH, SLIDE (REC/PB)			
S302	1-572-299-11	SWITCH, LEVER SLIDE (FUNCTION)			
S303	1-554-222-00	(WG)....SWITCH, SLIDE (FM MODE, ISS)			
S401	1-571-330-21	SWITCH, LEAF (POWER)			
S402	1-571-890-11	SWITCH, LEAF (HIGH SPEED)			
T1	1-404-355-00	TRANSFORMER, IF			
T301	1-433-346-11	TRANSFORMER, BIAS OSCILLATION			
T801	△1-450-013-11	(WG)....TRANSFORMER, POWER			
T801	△1-450-015-11	(E, EA, UAE)....TRANSFORMER, POWER			
S411	1-571-890-11	SWITCH, LEAF (POWER)			
S412	1-571-890-11	SWITCH, LEAF (FWD)			
S801	△1-572-290-11	(E, EA, UAE)....SWITCH, VOLTAGE SELECTOR			
SP901	1-544-154-11	SPEAKER			
SP902	1-544-154-11	SPEAKER			

Ref.No	Part No.	Description
ACCESSORIES & PACKING MATERIALS		

△1-551-983-00	(E23)....CORD, POWER	
△1-555-234-00	(WG, E12, EA, UAE)....CORD, POWER	
1-569-007-11	(E23)....ADAPTER, CONVERSION 2P	
1-569-008-11	(EA)....ADAPTER, CONVERSION 2P	
*3-357-550-01	(WG)....INDIVIDUAL CARTION	
*3-357-596-01	(EXCEPT FOR WG)....INDIVIDUAL CARTION	
*3-357-551-01	CUSHION (L)	
*3-357-588-01	CUSHION (R)	
3-704-284-01	SHEET, PROTECTION	
3-751-913-11	MANUAL, INSTRUCTION	
	(ENGLISH/FRENCH/SPANISH/GERMAN)	

Note: The components identified by mark △ or dotted line with mark △ are critical for safety. Replace only with part number specified.